

### **Abstract of the Disclosure**

A process cycles between etching and passivating chemistries to create rough sidewalls that are converted into small structures. In one embodiment, a mask is used to define lines in a single crystal silicon wafer. The process creates ripples on sidewalls of the lines corresponding to the cycles. The lines are oxidized in one embodiment to form a silicon wire corresponding to each ripple. The oxide is removed in a further embodiment to form structures ranging from micro sharp tips to photonic arrays of wires. Fluidic channels are formed by oxidizing adjacent rippled sidewalls. The same mask is also used to form other structures for MEMS devices.